

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

REMARKS

The claims in the application remain 1-25.

Favorable reconsideration of the application as amended is respectfully requested.

The status identifiers have been revised in accordance with the continuation of Box No. 2 on the Advisory Action. It is respectfully submitted the response terms noted on the Advisory Action are inconsistent. Firstly, Box a) states the period of reply expires 1 month from the mailing date of the final rejection; this is incorrect, because it would mean the period for reply has incorrectly expired November 3, 2003. Secondly, in the continuation of Box No. 2, it is stated that a shortened statutory period of 30 days has been set; 30 days is different from one month and there is no statement from what date the 30 days runs. In any event, it is respectfully believed the Examiner intended to allow a grace period of 1 month from mailing of the amendment in response to the Final Office Action on January 5, 2004 to allow for correction of the alleged non-compliance without any additional extension fees, so the amendment with these revisions herein is being timely presented without any additional fees (please contact the undersigned attorney should there be any questions in this regard).

The present amendment is being made in accordance with a telephone interview conducted between Supervisory Examiner Terrel Morris and the undersigned attorney on Wednesday, December 3, 2003. The courtesy extended by Examiner Morris in arranging for and conducting the telephone interview, is greatly appreciated.

The specification has been amended to recite the percent fabric surface occupancy of weft is weft width (C)/weft pitch (D) x 100 as shown Fig. 1 and eliminate the rejection under 35 U.S.C. § 112, first paragraph raised against Claims 21 and 22 in paragraph 4 of the final Office Action; this is just a minor, typographical correction to page 5 of the present application and finds clear support throughout the present application and drawing where the weft width is clearly shown by reference character C.

Independent Claim 1 has also been amended as agreed during the telephone interview with Examiner Morris (Please see Interview Summary PTO-413 mailed December 18, 2003 by the Patent and Trademark Office). More particularly, independent Claim 1 has been amended to recite the electrically conductive fabric has a layer of metal coating directly onto a single layer of warp 1 and weft 2 constituting the fabric, with the percent surface occupancy of the warp 1 ranging from 90% to 110% and weft 2 ranging from 40% to 80% (emphasis added; reference is being made to a preferred embodiment illustrated in the drawing of the present application). Examiner Morris has agreed recitation of "directly" in Claim 1 prohibits intervening layers between the metal coating and warp 1 and weft 2 layer.

More specifically, all pending Claims 1-25 have been rejected under 35 U.S.C. 103 as obvious over U.S. Pat. No. 5,981,409 to Takagi et al in view of U.S. Pat. No. 4,816,124 to Manabe et al in paragraph 5 of the final Office Action. However, as recognized by Examiner Morris supra, the structure of the claimed invention is different from Takagi et al. Another copy of the comparative sketches between the inventive fabric and Takagi et al presented during the telephone interview, is enclosed for both Examiners' convenience. It is again respectfully pointed out Takagi et al teach a three-layer, warp-weft-warp structure as explicitly described at column 3, lines 28-34:

As shown in FIG. 1, adjacent warp yarns partially overlap each other to form, in a sectional view, a three-layer structure of fabric consisting of warp-weft-warp. In a section of the fabric, a percent overlap of the width (L2+L3) of overlapped portions of adjacent warp yarns relative to the width (L1) of an overlapped portion of adjacent warp yarns is in the range of 35% to 60%, preferably 40% to 50%. .. [emphasis added]

Thus, in Takagi et al, wefts are always present inside warps in the thickness direction and the fabric looks like a three-layer structure (please see the enclosed comparative sketches). In contrast, in the inventive fabric the warps 1 and wefts 2 overlap

each other in the thickness direction as shown to provide a single layer of warp 1 and weft 2. Furthermore, as previously noted, Takagi et al fail to disclose use of metal at all. In fact, the fabric taught in Takagi et al cannot be uniformly metallized within the inner portion because of the illustrated structure.

As also pointed out previously, Manabe et al teach a fibrous object in which a urethane layer 2 is always present between the fibrous base material 1 and metal coating 3, with conductivity being restricted to the horizontal direction only. Thus, even if the teachings of Takagi et al and Manabe et al are combined, such a combined teaching still fails to suggest the claimed invention and accompanying advantages described, e.g., in the present application and preceding Amendments filed July 14, 2003 and January 21, 2003.

During the telephone interview, Examiner Morris requested explanation and/or illustration of warp surface coverage above 100% (please see the continuation sheet to Interview Summary PTOL-413). Accordingly, the following four sketches (i)-(iv) of the outer surface occupancy limits of the inventive fabric are enclosed for appropriate comprehension:

- (i) percent surface occupancy of warp 110% and weft 80% (with photograph);
- (ii) percent surface occupancy of warp 90% and weft 80% (with photograph);
- (iii) percent surface occupancy of warp 110% and weft 40%; and
- (iv) percent fabric surface occupancy of warp 90% and weft 40%.

As defined in the presently claimed invention, the percent fabric surface

occupancy means how much the warp 1 or weft 2 covers the surface of the fabric. In the claimed invention, the surface of the fabric is predominantly covered by warp 1 in a "two-dimensional" plane, i.e., when viewed from above. For example, in a fabric having a percent fabric surface occupancy of warp 100-110%, the possible spaces between yarns completely disappear, i.e., are covered by warp 1 (please see sketches (i) and (iii) enclosed herewith). In contrast, the percent defined in Takagi et al means a ratio between warp and weft appearing in the fabric surface and therefore always totals 100.

In the present invention, by increasing the warp 1 density of the fabric, i.e., providing a percent fabric surface occupancy of warp at 90% to 110%, the fabric surface is principally covered by warp 1. Furthermore, by decreasing the weft 2 density, i.e., providing a percent fabric surface occupancy of weft 2 at 40 to 80%, pores or spaces formed in warp 1-weft 2 intersecting points can be minimized, with the degree of freedom of weft 2 increasing and the fabric hence becoming more flexible.

Should the percent surface occupancy of warp 1 fall below 90%, then the pores formed in warp 1-weft 2 intersecting points become large; should the percent surface occupancy of warp 1 rise above 110%, then both weavability and flexibility of the fabric are impaired. Furthermore, if the percent fabric surface occupancy of warp exceeds 110%, then permeation of a plating solution is obstructed and it becomes difficult to plate the fabric.

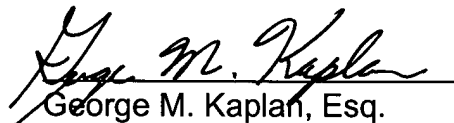
Should percent surface occupancy of weft 2 fall below 40%, then the yarn could potentially slip upon processing, creating difficulties; furthermore, if the percent surface

occupancy of the weft 2 rises above 80%, then the fabric becomes less flexible and the voids formed in the warp1-weft 2 intersecting points become larger in size. By using the inventive fabric with the claimed surface occupancies, an electrically conductive fabric is obtained which is more flexible, exhibits less back leak of resin during coating, and possesses high electrical conductivity and electromagnetic wave shielding properties as compared to conventional fabrics. Such advantages could never be attained by a fabric taught in Takagi et al, even if combined with the teachings of Manabe et al. An especially preferred embodiment of the claimed invention involves using multifilament yarns, e.g., polyester multifilament yarns as warp 1 and weft 2 (please see, e.g., Claims 13, 15 and 16).

Accordingly, in view of the forgoing amendment, accompanying remarks, statements in the Final Office Action and telephone interview conducted in the present application, it is respectfully submitted all claims pending herein are in condition for allowance. Please contact the undersigned attorney should there be any questions.

Early favorable action is earnestly solicited.

Respectfully submitted,

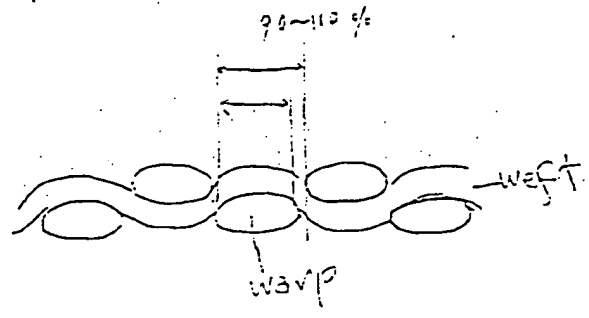

George M. Kaplan, Esq.
Reg. No. 28,375
Attorney for Applicant(s)

DILWORTH & BARRESE LLP
333 Earle Ovington Blvd.
Uniondale, NY 11553
(516) 228-8484

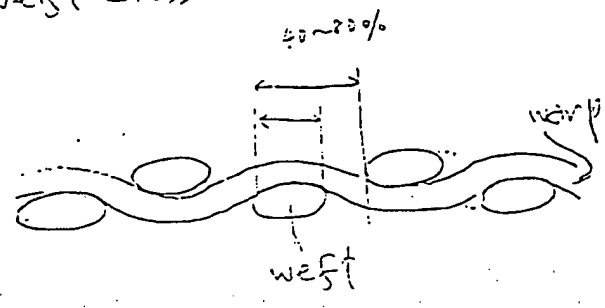
O I P E J C 6 4
FEB 03 2004

Fabric of the present invention

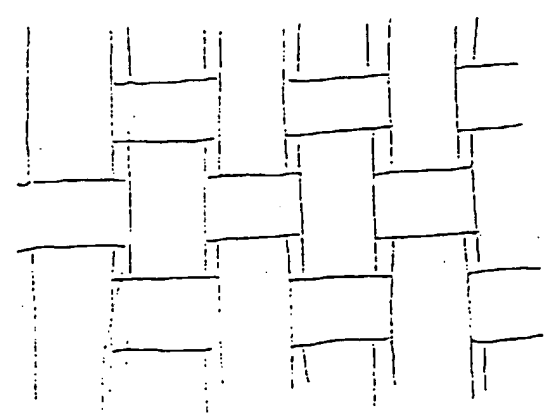
<warp crosssection>



<weft cross-section>

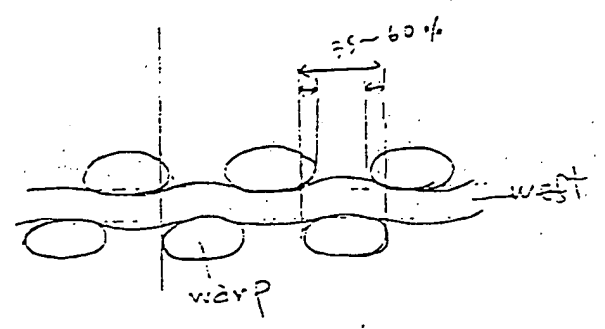


<plane view>

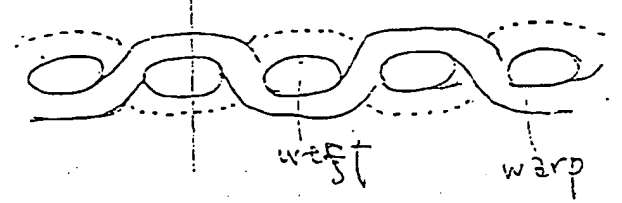


space
There are spaces and thus flexible.

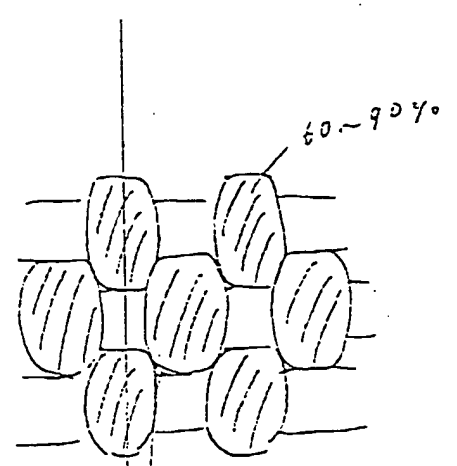
Fabric of U.S. Patent No. 5,81,409



weft is more linear
the fabric looks like three-layer-structure,



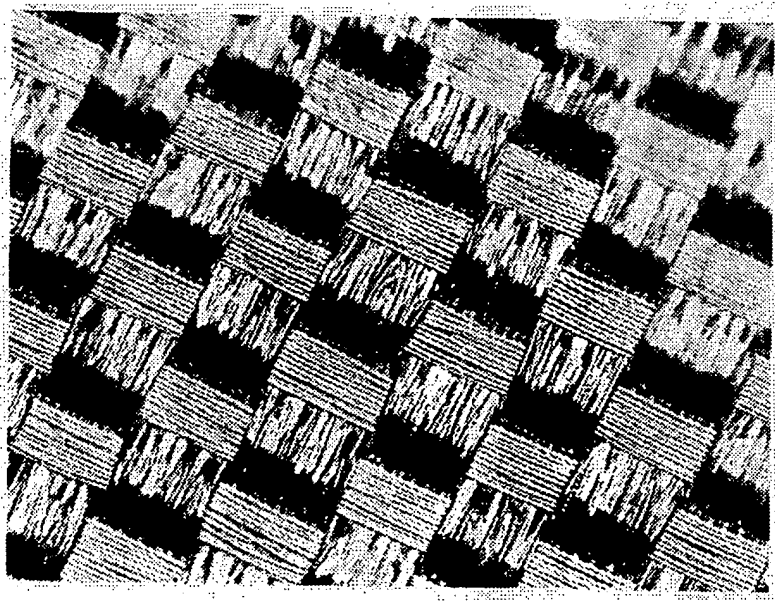
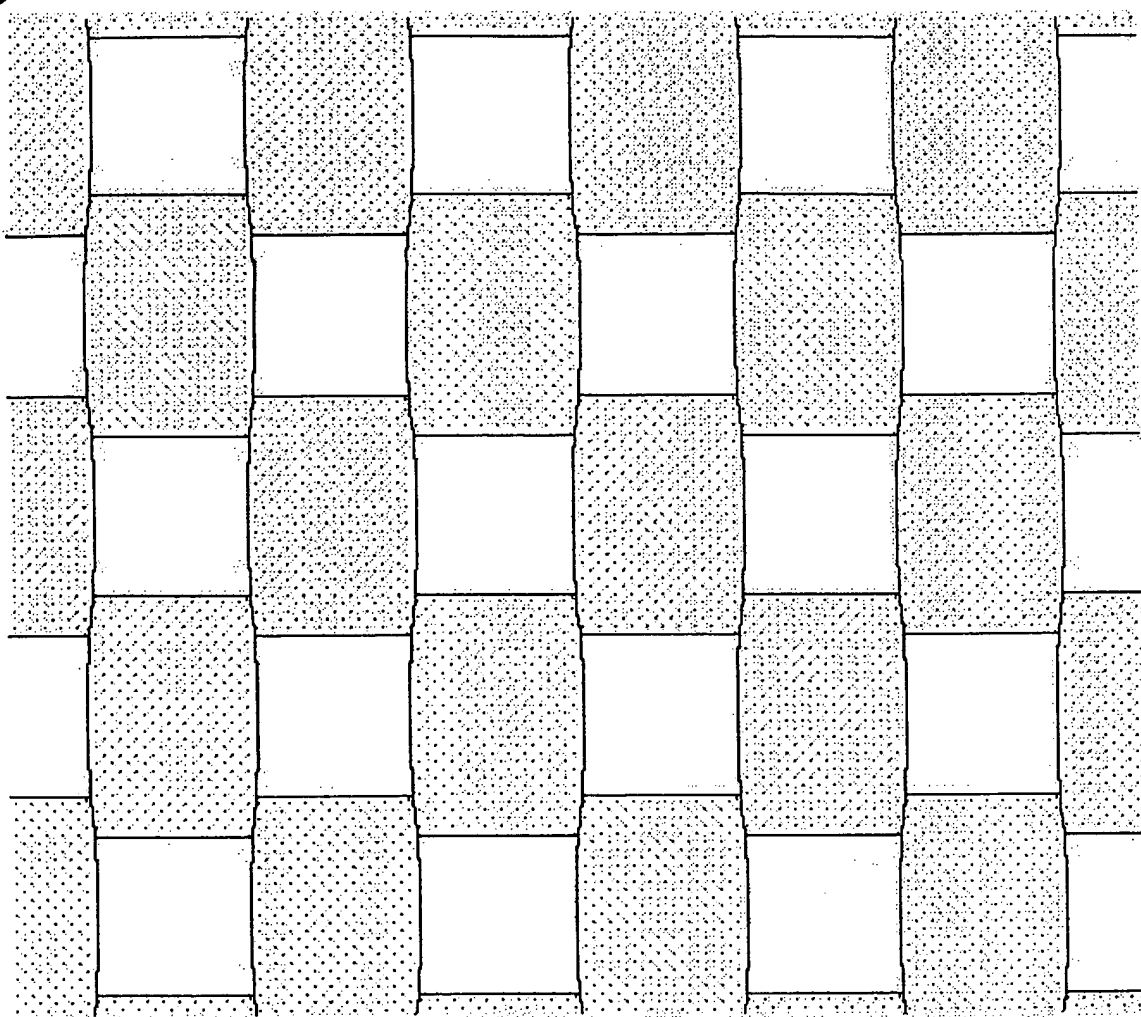
wefts are substantially in a line.

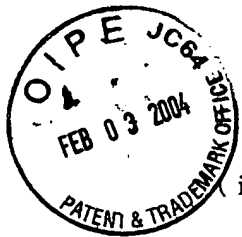


There is substantially no space between yarns.

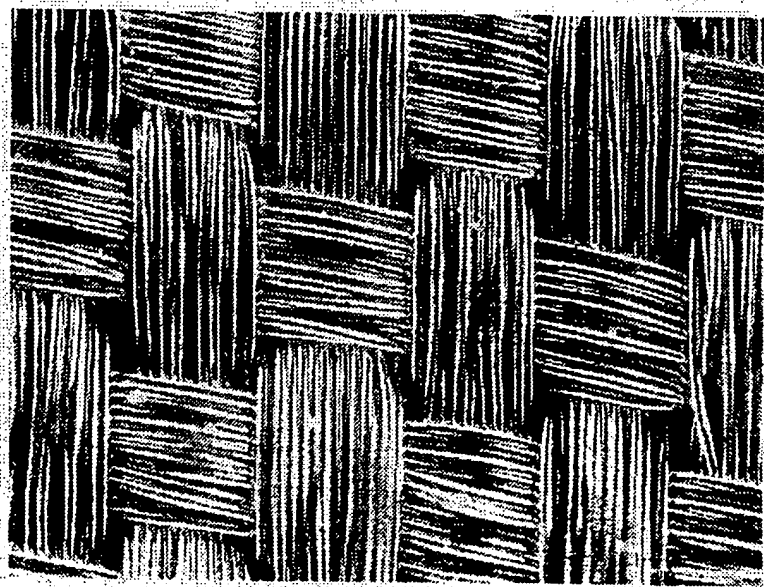
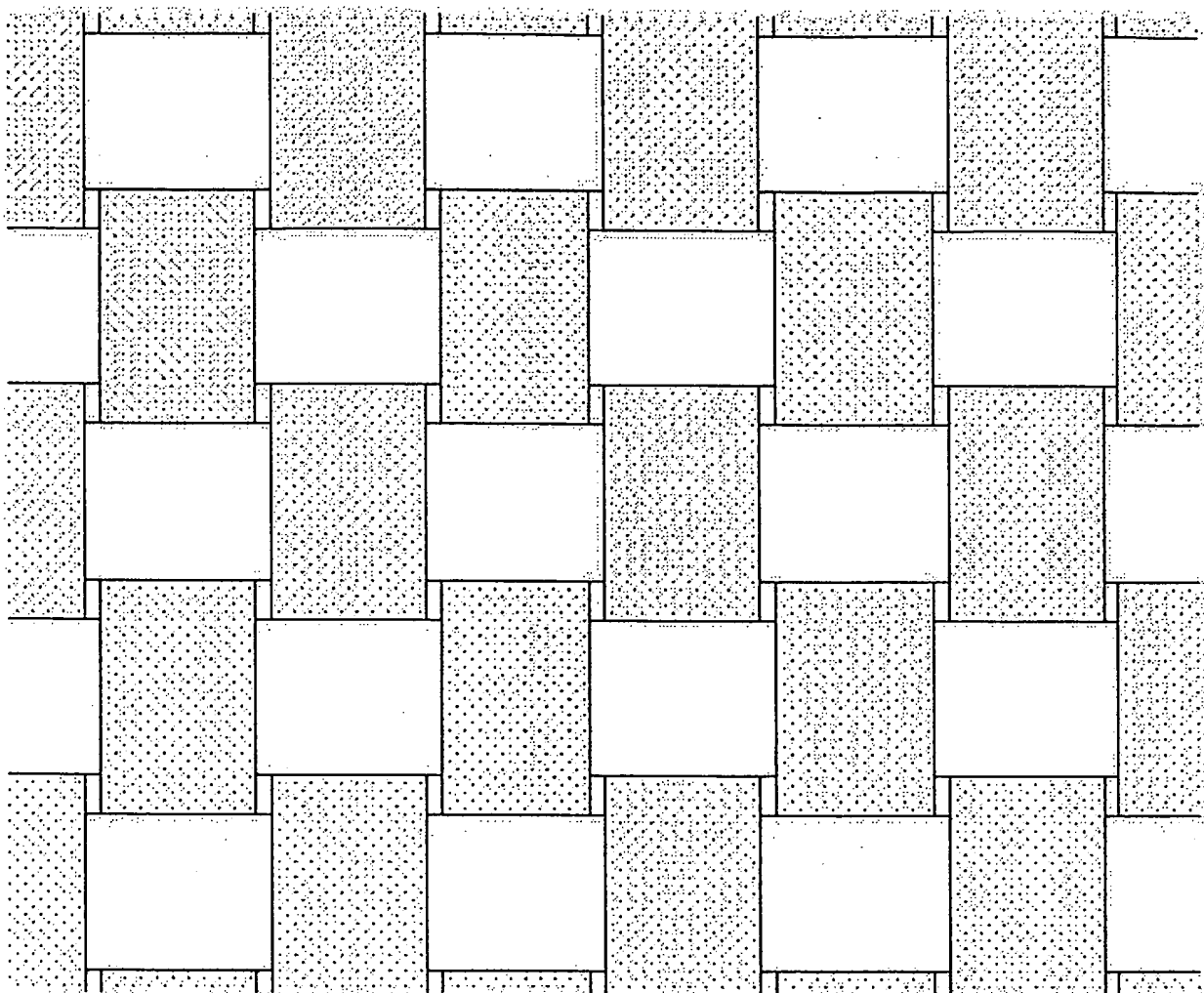


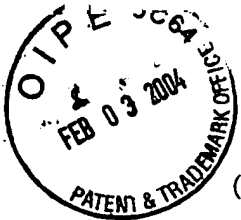
) 経110/緯80



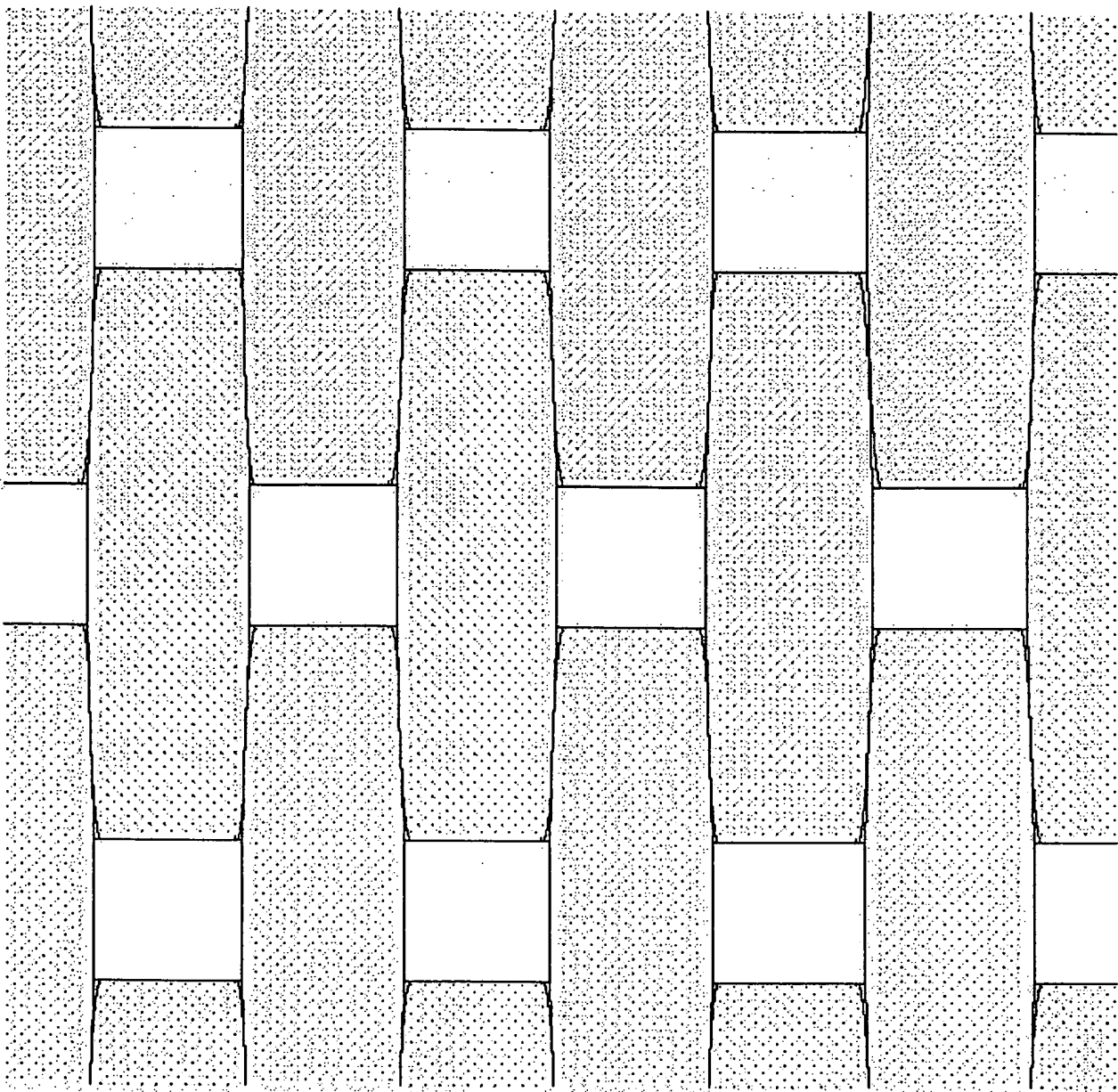


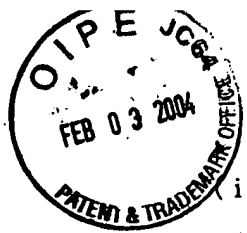
(i i) 經90／緯80





(iii) 經110/緯40





(i v) 經 9 0 / 緯 4 0

